

## REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Claims 1, 2, 6-13, 17 and 23 stand rejected under 35 U.S.C. § 103(b) as being unpatentable over U.S. Patent No. 5,394,436 by Meier et al. ("436 Meier") in view of U.S. Patent No. 5,682,382 by Shepard ("Shepard"). Claims 3-5, 14-16, 21 and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meier '436 in view of Shepard and further in view of U.S. Patent No. 6,363,062 by Aaronson et al. ("Aaronson"). Claims 18-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meier '436 in view of Shepard and further in view of U.S. Patent No. 5,673,031 to Meier ("031 Meier"). Claim 1 is objected to because of informalities.

Please amend claims 1, 12, and 18.

The Examiner has objected to claim 1 for being unclear. The Examiner states

Claim 1 is objected to because of the following informalities: Particularly, the amended claim 1 recites, "exchanging scheduling information between the plurality of collocated nodes over the first interface" (lines 7-8) and "exchanging scheduling information associated with transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the second interface" (lines 9-11). According to the above language it appears the scheduling information is unique for each of the above steps. However, the claim further recites, "determining, based at least in part on the scheduling information, a schedule. . ." (lines 12-16) and it is unclear to which of the previous scheduling information this recitation refers. Applicant is respectfully requested to insert "the" or "said" between "exchanging" and "scheduling" at line 9 (i.e., the second recitation of "scheduling information"), if appropriate, to provide antecedent basis for the reference to scheduling information at line 12 (i.e., a non-specific third recitation of "scheduling information"). Claim 1 as originally filed includes the term "said" at line 9, however, this term has been removed in the amended claim 1, rendering the amended claim 1 unclear.

(Office Action dated April 1, 2003, pp. 3-4)

Applicants claim 1, as amended, states

1. A method, comprising:

...  
exchanging a first scheduling information between the plurality of collocated nodes over the first interface,  
exchanging a second scheduling information associated with transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the second interface; and  
determining, based at least in part on the first scheduling information, a schedule for the plurality of collocated nodes for transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the second interface, . . .

Thus, the schedule is based the at least in part on the first scheduling information. Applicants respectfully submit that claim 1, as amended, overcomes the above objection.

The Examiner has rejected claims 1, 2, 6-13, 17 and 23 under 35 U.S.C. § 103(b) as being unpatentable over '436 Meier in view of Shepard. The Examiner states that '436 Meier discloses the following:

Regarding claims 1, 12 and 23, Meier '436 teaches an RF communications system comprising a plurality of non-collocated nodes (see FIG. 1, bridges 40 and 50), each capable of receiving and transmitting transmissions on a first interface (RF links 106 and 114), and a plurality of collocated nodes (bridges 24 and 42), each capable of communicating between one another over a second interface (data communication link 16). Furthermore, each of the plurality of collocated nodes is capable of receiving and transmitting transmissions to and from the plurality of non-collocated nodes on the first interface (via RF links 104 and 110).

(Office Action dated April 1, 2003, pp. 4) (emphasis added)

However, applicants respectfully submit that claim 1, as amended, is not obvious in view of '436 Meier and Shepard. Claim 1, as amended, includes the following limitations:

1. A method, comprising:  
scheduling transmissions in a network including a plurality of collocated nodes and a plurality of non-collocated nodes, wherein the plurality of collocated nodes communicate between one another over a first interface and the plurality of non-collocated nodes communicate with the plurality of collocated nodes over a second interface;

exchanging a first scheduling information between the plurality of collocated nodes over the first interface,  
exchanging a second scheduling information associated with transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the second interface; and  
determining, based at least in part on the first scheduling information, a schedule for the plurality of collocated nodes for transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the second interface, wherein the schedule includes information on when and in what order the transmissions may occur in the network, and wherein a first collocated node includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes.

(emphasis added)

'436 Meier does not disclose "a first collocated node [that] includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes." '436 Meier discloses

[T]he nodes 20, 22, 24, 40, 42, 44, 46, 48, 50 and 52 are intelligent base transceiver units of the type RB4000 of the Norand Corporation. '436

('436 Meier Col. 3, Lns. 43-46) (emphasis added)

Applicants respectfully assert that '436 Meier discloses and explicitly teaches a one transceiver per discrete node relationship for the nodes. Therefore, '436 Meier does not disclose or suggest the limitations stated in claim 1.

Applicants respectfully assert that Shepard does not disclose "a first collocated node [that] includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes." Shepard discloses

[G]enerally designated at 30 is a block diagram of a packet radio station in accord with the present invention. Each station 30 includes a spread-spectrum transmitter 32 and a spread-spectrum receiver.

(Shepard Col. 4, Lns. 23-26) (emphasis added)

Shepard discloses and explicitly teaches a one transceiver per discrete node relationship for the nodes. Therefore, Shepard does not disclose or suggest the limitations stated in claim 1.

It is also respectfully submitted that '436 Meier does not suggest a combination with Shepard, and Shepard does not suggest a combination with '436 Meier. It would be impermissible hindsight to combine '436 Meier with Shepard based on applicants' own disclosure.

Furthermore, even if '436 Meier and Shepard were combined, such a combination would lack "a first collocated node [that] includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes" as recited in claim 1.

Therefore, in view of the above distinction, neither '436 Meier nor Shepard, individually or in combination, disclose each and every limitation of claim 1. As such, claim 1, as amended, is not rendered obvious by '436 Meier in view of Shepard under 35 U.S.C. § 103(a).

Given that claims 2 and 6-11 depend from claim 1, applicants submit that claims 2 and 6-11 are not obvious over '436 Meier in view of Shepard.

Further, applicants traverse the Examiner's assertion that "it is inherent in the invention of Meier '436 for data to be sent by the non-collocated nodes over the second interface during the same time as the scheduling information is sent over the first interface." '436 Meier does not discuss establishing a schedule. Further, data could be sent after a schedule is established.

The Examiner has also rejected claims 12, 13, and 17 under 35 U.S.C. § 103(b) as being unpatentable over '436 Meier in view of Shepard.

However, applicants respectfully submit that independent claim 12, as amended, is not obvious in view of '436 Meier and Shepard. Claim 12, as amended, includes the following limitations:

12. A communications network, the network comprising:
  - a plurality of non-collocated nodes, each of the plurality of non-collocated nodes capable of receiving and transmitting transmissions on a first interface; and
  - a plurality of collocated nodes, the plurality of collocated nodes each capable of communicating between one another over a second interface, each of the plurality of collocated nodes further capable of receiving and transmitting transmissions to and from the plurality of non-collocated nodes on the first interface, wherein the plurality of collocated nodes exchanges scheduling information with one another over the second interface, the scheduling information associated with transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the first interface, and determines, based at least in part on the scheduling information, a schedule for the plurality of collocated nodes for transmission between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the first interface; and wherein a first collocated node includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.

(emphasis added)

'436 Meier does not disclose "a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes." As discussed above, '436 Meier discloses and explicitly teaches a one transceiver per discrete node relationship for the nodes. Therefore, '436 Meier does not disclose or suggest the limitations stated in independent claim 12.

Shepard does not disclose "a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes." As discussed above, Shepard discloses and explicitly teaches

a one transceiver per discrete node relationship for the nodes. Therefore, Shepard does not disclose or suggest the limitations stated in independent claim 12.

It is also respectfully submitted that '436 Meier does not suggest a combination with Shepard, and Shepard does not suggest a combination with '436 Meier. It would be impermissible hindsight to combine '436 Meier with Shepard based on applicants' own disclosure.

Furthermore, even if '436 Meier and Shepard were combined, such a combination would lack "a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes."

Therefore, in view of the above distinction, neither '436 Meier nor Shepard, individually or in combination, disclose each and every limitation of claim 12. As such, independent claim 12, as amended, is not rendered obvious by '436 Meier in view of Shepard under 35 U.S.C. § 103(a).

Given that claims 13 and 17 depend from claim 12, applicants submit that claims 13 and 17 are not obvious over '436 Meier in view of Shepard.

The Examiner has also rejected claim 23 under 35 U.S.C. § 103(b) as being unpatentable over '436 Meier in view of Shepard.

However, applicants respectfully submit that independent claim 18, as amended, is not obvious in view of '436 Meier and Shepard. The office action acknowledges that "Meier '436 . . . does not disclose using routers." (Office Action dated April 1, 2003, pp. 18) Shepard also does not disclose collocated routers and non-collocated routers.

Therefore, in view of the above distinction, neither '436 Meier nor Shepard, individually or in combination, disclose each and every limitation of claim 18. As such, independent claim 18, as amended, is not rendered obvious by '436 Meier in view of Shepard under 35 U.S.C. § 103(a).

Given that claim 23 depends from and includes the limitations of claim 18, applicants submit that claim 23 is not obvious in view of '436 Meier and Shepard.

The Examiner has rejected claims 3-5 under 35 U.S.C. § 103(a) as being unpatentable over Meier '436 in view of Shepard and further in view of Aaronson.

However, applicants respectfully submit that independent claim 1, as amended, is not obvious in view of '436 Meier, Shepard and Aaronson. Claim 1, as amended, includes the following limitations:

Claim 1, as amended, includes the following limitations:

1. A method, comprising:
  - scheduling transmissions in a network including a plurality of collocated nodes and a plurality of non-collocated nodes, wherein the plurality of collocated nodes communicate between one another over a first interface and the plurality of non-collocated nodes communicate with the plurality of collocated nodes over a second interface;
  - exchanging a first scheduling information between the plurality of collocated nodes over the first interface,
  - exchanging a second scheduling information associated with transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the second interface; and
  - determining, based at least in part on the first scheduling information, a schedule for the plurality of collocated nodes for transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the second interface, wherein the schedule includes information on when and in what order the transmissions may occur in the network, and wherein a first collocated node includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes.

(emphasis added)

As discussed, 'neither '436 Meier nor Shepard, individually or in combination, disclose or suggest "a first collocated node [that] includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes."

Aaronson does not disclose "a first collocated node [that] includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes." Aaronson is silent on the transmitter per discrete node relationship. Therefore, Aaronson does not disclose or suggest the limitations stated in independent claim 1.

It is also respectfully submitted that '436 Meier does not suggest a combination with Shepard and Aaronson, and Shepard does not suggest a combination with '436 Meier and Aaronson. It would be impermissible hindsight to combine '436 Meier with Shepard and further with Aaronson based on applicants' own disclosure.

Furthermore, even if '436 Meier, Shepard, and Aaronson were combined, such a combination would lack "a first collocated node [that] includes two or more discrete nodes sharing a transmitter to communicate with one or more of the non-collocated nodes."

Therefore, in view of the above distinction, neither '436 Meier, Aaronson, nor Shepard, individually or in combination, disclose each and every limitation of claim 1. As such, independent claim 1, as amended, is not rendered obvious by '436 Meier in view of Shepard and further in view of Aaronson under 35 U.S.C. § 103(a).

Given that claims 3-5 depend from claim 1, applicants submit that claims 3-5 are not obvious in view of '436 Meier, Shepard, and Aaronson.

The Examiner has also rejected claims 14-16 under 35 U.S.C. § 103(a) as being unpatentable over Meier '436 in view of Shepard and further in view of Aaronson..



However, applicants respectfully submit that independent claim 12, as amended, is not obvious in view of '436 Meier, Shepard and Aaronson. Claim 12, as amended, includes the following limitations:

12. A communications network, the network comprising:
  - a plurality of non-collocated nodes, each of the plurality of non-collocated nodes capable of receiving and transmitting transmissions on a first interface; and
  - a plurality of collocated nodes, the plurality of collocated nodes each capable of communicating between one another over a second interface, each of the plurality of collocated nodes further capable of receiving and transmitting transmissions to and from the plurality of non-collocated nodes on the first interface, wherein the plurality of collocated nodes exchanges scheduling information with one another over the second interface, the scheduling information associated with transmissions between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the first interface, and determines, based at least in part on the scheduling information, a schedule for the plurality of collocated nodes for transmission between the plurality of collocated nodes and each of the plurality of non-collocated nodes on the first interface; and wherein a first collocated node includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.

(emphasis added)

As discussed, 'neither '436 Meier, nor Shepard, individually or in combination, disclose or suggest "a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes."

Aaronson does not disclose "a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes." Aaronson is completely silent on the transmitter per discrete node relationship. If a reference does not discuss a limitation of a claim, then that

reference cannot disclose or suggest that limitation. Therefore, Aaronson does not disclose or suggest the limitations stated in independent claim 12.

It is also respectfully submitted that '436 Meier does not suggest a combination with Shepard and Aaronson, and Shepard does not suggest a combination with '436 Meier and Aaronson. It would be impermissible hindsight to combine '436 Meier with Shepard and further with Aaronson based on applicants' own disclosure.

Furthermore, even if '436 Meier, Shepard and Aaronson were combined, such a combination would lack "a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes."

Therefore, in view of the above distinction, neither '436 Meier, Aaronson, nor Shepard, individually or in combination, disclose each and every limitation of claim 12. As such, independent claim 12, as amended, is not rendered obvious by '436 Meier in view of Shepard and further in view of Aaronson under 35 U.S.C. § 103(a).

Given that claims 14, 15, and 16 depend from claim 12, applicants submit that claims 14-16 are not obvious over '436 Meier in view of Shepard and further in view of Aaronson.

The Examiner has also rejected claims 22-23 under 35 U.S.C. § 103(a) as being unpatentable over Meier '436 in view of Shepard, further in view of Aaronson..

However, applicants respectfully submit that independent claim 18, as amended, is not obvious in view of '436 Meier, Shepard and Aaronson. Claim 18, as amended, includes the following limitations:

18. (Currently Amended) An apparatus in a communications network including a plurality of non-collocated routers capable of communicating over a first interface, the apparatus comprising:

at least two collocated routers, the at least two collocated routers capable of communications between one another over a second interface, and the at least two collocated routers capable of communications with each of the plurality of non-collocated routers over the first interface, wherein the at least two routers exchange scheduling information over the second interface, the scheduling information associated with transmissions between the at least two collocated routers and the plurality of non-collocated routers on the first interface, and wherein the at least two collocated routers determine, based at least in part on the scheduling information, a schedule for transmission between the at least two collocated routers and each of the plurality of non-collocated routers on the first interface, wherein a first collocated router includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.

(emphasis added)

As discussed, ‘neither ‘436 Meier nor Shepard, individually or in combination, disclose or suggest “a first collocated router [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.”

Aaronson does not disclose “a first collocated router [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.” Aaronson is silent on the transmitter per discrete router relationship. Therefore, Aaronson does not disclose or suggest the limitations stated in independent claim 18.

It is also respectfully submitted that ‘436 Meier does not suggest a combination with Shepard and Aaronson, and Shepard does not suggest a combination with ‘436

Meier and Aaronson. It would be impermissible hindsight to combine '436 Meier with Shepard and further with Aaronson based on applicants' own disclosure.

Furthermore, even if '436 Meier, Shepard and Aaronson were combined, such a combination would lack "a first collocated router [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes."

Therefore, in view of the above distinction, neither '436 Meier, Aaronson, nor Shepard, individually or in combination, disclose each and every limitation of claim 18. As such, independent claim 18, as amended, is not rendered obvious by '436 Meier in view of Shepard and further in view of Aaronson under 35 U.S.C. § 103(a).

Given that claims 22-23 depend from claim 18, applicants submit that claims 22-23 are not obvious over '436 Meier in view of Shepard and further in view of Aaronson.

The Examiner has rejected claims 18-20 under 35 U.S.C. 103(a) as being unpatenable over '436 Meier in view of Shepard and further in view of '031 Meier. The Examiner states:

Meier '031 further teaches advantageously implementing routers as communication nodes (e.g., see col. 30, line 54 -col. 32, line 23) to provide guaranteed coverage for fringe areas without adding additional wiring and to provide continuing coverage when a wired base fails.

(Office Action dated April 1, 2003, pp. 10-11)

However, applicants respectfully submit that independent claim 18, as amended, is not obvious in view of '436 Meier, Shepard and Aaronson. Claim 18, as amended, includes the following limitations:

18. An apparatus in a communications network including a plurality of non-collocated routers capable of communicating over a first interface, the apparatus comprising:

at least two collocated routers, the at least two collocated routers capable of communications between one another over a second interface, and the at least two collocated routers capable of communications with each of the plurality of non- collocated routers over the first interface, wherein the at least two routers exchange scheduling information over the second interface, the scheduling information associated with transmissions between the at least two collocated routers and the plurality of non-collocated routers on the first interface, and wherein the at least two collocated routers determine, based at least in part on the scheduling information, a schedule for transmission between the at least two collocated routers and each of the plurality of non-collocated routers on the first interface, wherein a first collocated router includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.

(emphasis added)

As discussed, ‘neither ‘436 Meier nor Shepard, individually or in combination, disclose or suggest “a first collocated router [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.”

’031 Meier does not disclose “a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes.” ’031 Meier discloses:

Wireless routing is especially effective at filling in fringe areas. In the example above, the outside of the loading dock could have marginal coverage. If, once the system is installed, the coverage in this area turns out to be unacceptable, couple of wireless routers could be added to guarantee solid coverage in this area without adding any more wiring.

(’031 Meier Col. 30, Lns. 56-64) (emphasis added)

’031 Meier is completely silent on the transmitter per discrete node relationship. If a reference does not discuss a limitation of a claim, then that reference cannot

disclose or suggest that limitation. Therefore, '031 Meier does not disclose or suggest the limitations stated in independent claim 18.

It is also respectfully submitted that '436 Meier does not suggest a combination with Shepard and '031 Meier, and Shepard does not suggest a combination with '436 Meier and '031 Meier. It would be impermissible hindsight to combine '436 Meier with Shepard and further with '031 Meier based on applicants' own disclosure.

Furthermore, even if '436 Meier, Shepard and '031 Meier were combined, such a combination would lack "a first collocated node [that] includes a first transmitter and a first receiver to communicate to a first group of non-collocated nodes and a second transmitter and a second receiver to communicate to a second group of non-collocated nodes."

Therefore, in view of the above distinction, neither '436 Meier, '031 Meier, nor Shepard, individually or in combination, disclose each and every limitation of claim 18. As such, independent claim 18, as amended, is not rendered obvious by '436 Meier in view of Shepard and further in view of '031 Meier under 35 U.S.C. § 103(a).

Given that claims 19-20 depend from claim 18, applicants submit that claims 19-20 are not obvious over '436 Meier in view of Shepard and further in view of '031 Meier.

The Examiner requested publication dates associated with a couple reference documents submitted in the information disclosure statement filed January 16, 2003. The publication dates of those reference documents have been included in the information disclosure statement filed with this response. Applicants respectfully request that the Examiner consider all of the reference documents submitted in this information disclosure statement.

Conclusion

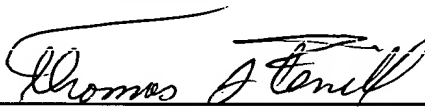
For the foregoing reasons, applicants respectfully submit that the applicable rejections and objections have been overcome and that the claims are in condition for allowance.

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of the present application, the Examiner is invited to contact Thomas S. Ferrill at (408) 720-8300.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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